

CLAIMS

1. A method of embedding watermarking data in an audio signal, comprising the steps of:
 - (a) incorporating watermarking information into said audio signal,
 - (b) sectioning said signal into at least two sections,
 - (c) marking at least one said section whereby said sections may be identified,
 - (d) generating distortion in one said section of said signal in a manner recoverable by a key obtainable from at least one other said section, and
 - (e) appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section.
2. A method as claimed in claim 1 wherein said key is embedded in said at least one other said section.
3. A method as claimed in claim 2 wherein said distortion is generated by creating a pseudo-random number sequence for adding as pseudo-random noise to said first said section, and wherein said pseudo-random number sequence is embedded in said at least one other section to enable said random noise to be subsequently removed.

4. A method as claimed in claim 2 wherein the first section is distorted by means of a scrambling function.
5. A method as claimed in claim 1 wherein said key is obtained directly from a sequence of bits contained in said at least one other said section.
6. A method as claimed in claim 5 wherein said key is obtained by applying a hashing function to the bit sequence of said at least one other said section.
7. A method as claimed in claim 5 wherein the output of the hashing function is added to the bitstream of said first section to create said distortion.
8. A method as claimed in claim 5 wherein the bitstream of said first section is subject to a scrambling function to create said distortion.
9. A method as claimed in claim 1 wherein said first section comprises a section to which access is to be restricted.
10. A method as claimed in claim 1 wherein said at least one other section comprises an advertisement.

11. A method as claimed in claim 1 wherein said at least one other section comprises a trial listening section.
12. A method as claimed in claim 1 wherein said at least one other section comprises an advertisement section and a trial listening section.
13. A method as claimed in claim 1 wherein said audio signal is compressed after watermarking.
14. A method as claimed in claim 13 wherein said first section of said compressed signal is distorted by means of a scrambling function that receives as a key the output of a hashing function that acts upon said at least one other section.
15. A method as claimed in claim 14 wherein said audio signal is compressed in MP3 format and said scrambling function acts upon the bits contained within MP3 frames.
16. A method of playing back an audio signal having data embedded within it by the method of claim 1, comprising:
 - (a) reading said composite signal,
 - (b) identifying said sections,
 - (c) obtaining said key from said at least one undistorted section, and

(d) recovering said distorted section.

17. A method as claimed in claim 16 wherein said distorted section is recovered in real time without being written to memory.
18. A watermarked audio signal comprising at least two sections, including a first section which is distorted in a manner recoverable by means of a key obtainable from at least one other section.
19. A watermarked audio signal as claimed in claim 18 wherein said first section is a section to which access is restricted.
20. A watermarked audio signal as claimed in claim 18 wherein said at least one other section is an advertisement section.
21. A watermarked audio signal as claimed in claim 18 wherein said at least one other signal comprises a trial listening section.
22. A watermarked audio signal as claimed in claim 18 wherein said at least one other signal comprises an advertisement section and a trial listening section.

23. Apparatus for embedding watermarking data in an audio signal, comprising:
- (a) means for incorporating watermarking information into said audio signal,
 - (b) means for sectioning said signal into at least two sections,
 - (c) means for marking at least one said section whereby said sections may be identified,
 - (d) means for generating distortion in one said section of said signal in a manner recoverable by a key obtainable from at least one other said section, and
 - (e) means for appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section.
24. Apparatus for the playing back an audio signal having data embedded within it by the method of claim 1, comprising;
- (a) means for reading said composite signal,
 - (b) means for identifying said sections,
 - (c) means for obtaining said key from said at least one undistorted section, and
 - (d) means for recovering said distorted section.

25. A method for including an advertisement with audio data in an audio signal comprising, sectioning said signal into a first section and an advertisement section, generating distortion of said first section in a manner recoverable by a key obtainable from said advertisement section, and appending said distorted first section to said advertisement section.
26. A method for including a trial listening section with audio data in an audio signal comprising, sectioning said signal into a first section and a trial listening section, generating distortion of said first section in a manner recoverable by a key obtainable from said trial listening section, and appending said distorted first section to said advertisement section.
27. A method for including an advertisement section and a trial listening section with audio data in an audio signal, including sectioning said signal into a first section, an advertisement section and a trial listening section, marking at least one of said sections whereby said sections may be identified, generating distortion in said first section in a manner recoverable by a key obtainable from at least one of said advertisement and trial listening sections, and appending said distorted first section to said advertisement and trial listening sections to form a composite signal.
28. A method of restricting access to a part of a data signal, comprising the steps of:

- (a) sectioning said signal into at least two sections,
- (b) marking at least one said section whereby said sections may be identified,
- (c) generating distortion in one said section of said signal in a manner recoverable by a key obtainable from at least one other said section, and
- (d) appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section.